

## Acids & Bases: pH Testing

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**Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### LEARNING OBJECTIVE

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The student will use a homemade natural indicator to test the pH of common household substances and classify them as acidic, basic, or neutral.

### MATERIALS NEEDED

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- 1/4 head of red cabbage (or 4-5 leaves)
- Hot water (adult supervision)
- A strainer
- 5-6 small clear cups
- 5-6 household liquids to test (lemon juice, vinegar, baking soda + water, dish soap, milk, tap water)
- Notebook paper

### HANDS-ON ACTIVITY

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1. With adult help, chop the red cabbage and steep it in hot water for 10 minutes to make a purple cabbage-juice indicator, then strain out the cabbage.
2. Pour a small amount of cabbage juice indicator into each of your 5-6 small cups.
3. Add a small amount of each household liquid you're testing to a separate cup of indicator, and observe the color change.
4. Record the resulting color for each liquid in a data table on notebook paper.
5. Using the color scale (pink/red = acidic, purple = neutral, blue/green = basic), classify each liquid as acidic, basic, or neutral.

### QUESTIONS

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1. **What color did the cabbage juice indicator turn when mixed with lemon juice or vinegar, and what does that indicate?**

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2. **What color did the cabbage juice indicator turn when mixed with the baking soda solution, and what does that indicate?**
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**3. List all your tested liquids in order from most acidic to most basic, based on your color results.**

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**4. Why does red cabbage juice work as a pH indicator?**

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